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09/489,194	01/20/2000	Anthony Mauro	990228	5537

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Qualcomm Incorporated
Patents Department
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EXAMINER	
AKPATI, ODAICHE T	

ART UNIT	PAPER NUMBER
2135	11

DATE MAILED: 08/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/489,194	MAURO, ANTHONY	
	Examiner	Art Unit	
	Tracey Akpati	2135	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 May 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-40* is/are rejected.

7)☒ Claim(s) *1* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04 September 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-40 are pending. Claims 1, 3-21, 25 and 30 have been amended. The 112 rejection has been overcome. This action is non-final.

Response to Arguments

2. The attorney argues that the Szczutkowski et al (4817146) does not disclose "dropping one or more of said frames; and disabling said state vector from incrementing for each of said data frames being dropped." This attorney's arguments are persuasive and the rejection has been modified. A new ground of rejection has been made for all claims containing this limitation.

Claim Objections

Claim 1 is objected to because of the following informalities: Misspelling of synchronization. Appropriate correction is required to the spelling in all occurrences of this word in other existing claims.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 20, 21, 39 and 40 are rejected under 35 U.S.C. 102(b) as being anticipated by Szczutkowski et al (4817146).

With respect to Claim 20, the limitation "receiving data frames at a receiver" is met on column 7, lines 24-30.

The limitation of "storing said data frames in a queue" is met on column 7, lines 24-30.

The limitation of "providing at least one of said data frames from said queue to a decryption module if available in said queue" is met on column 7, lines 24-30.

The limitation "providing a state vector to said decryption module, said state vector incremented at a predetermined rate" is met on column 22, lines 21-31.

The limitation "generating a codebook from said decryption module, using at least said state vector, said codebook for decrypting at least one of said data frames" is met on column 24, lines 9-17.

The limitation "disabling said state vector wherein said queue is in an underflow condition" is met on column 24, lines 19-31.

With respect to Claim 21, the limitation "determining that none of said data frames are available for decryption in said queue" is met on column 24, lines 12-15.

The limitation "disabling said state vector" is met on column 24, lines 26-30. Disabling takes place when synchronization is asserted as lost and the counter has incremented to the maximum 10 data frames and needs to reset.

The limitation "determining that at least one of said data frames is available for decryption in said queue" is met on column 22, lines 44-52.

The limitation "enabling said state vector" is met on column 22, lines 38-43.

The limitation "incrementing said state vector by a value of one" is met on column 24, lines 19-26.

With respect to Claim 39, the limitation "means for generating data frames" is met on column 7, lines 14-24.

The limitation "a queue for storing said data frames" is met on column 7, lines 24-30.

The limitation "means for generating a state vector, said state vector incremented at a predetermined rate" is met on column 22, lines 21-31.

The limitation "a decryption module for generating a codebook from at least said state vector, said codebook for decrypting at least one of said data frames" is met on column 24, lines 9-17 and on column 5, lines 35-40. The codebook/unique code is represented by the secret key in the referenced paragraph. This is because the secret key, (like the codebook) in conjunction with the state vector is used to decrypt the data frame.

The limitation "a processor for disabling said state vector if no data frames are available to be decrypted in said queue" is met on column 24, lines 19-31. Disabling occurs when the synchronization is lost and the counter has incremented to its maximum 10 data frames and needs to be reset.

With respect to Claim 40, the limitation "wherein said state vector is enabled when at least one data frame becomes available for encryption in said queue" is met on column 22, lines 38-43.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-19, 22-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Szczutkowski et al (4817146) in view of Stevens (TCP/IP Illustrated, Volume 1).

With respect to Claim 1, Szczutkowski et al meets the limitation of "achieving crypto-syncronization in a packet data communication system, the packet data communication system comprising a transmitter and a receiver, said transmitter and said receiver each having cryptographic security capabilities" on Fig. 1; and "generating data frames at a predetermined rate in a transmitter" is met on column 5, lines 35-40; and "incrementing a state vector at said predetermined rate" is met on column 24, lines 19-22; and "providing said state vector to an encryption module" is met on column 5, lines 35-40; and "generating a codebook from said encryption module, using at least said state vector, said codebook for encrypting at least one of said data frames" is met on column 5, lines 35-40. The codebook/unique code is represented by the secret key in the referenced paragraph. This is because the secret key, (like the codebook) in conjunction with the state vector is used to encrypt the data frame. Szczutkowski et al however does not meet the following limitation.

The limitation of "dropping one or more of said frames and disabling said state vector from incrementing for each of said data frames being dropped" is met by Stevens on page 310.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Stevens within the system of Szczutkowski et al because dropping of the data frames helps prevent congestion avoidance.

With respect to Claim 2, all the limitation is met by Szczutkowski et al except the following limitation.

The limitation of "wherein said state vector is enabled after a desired number of said data frames have been dropped" is met by Stevens on page 310. The congestion window, cwnd represents the state vector. It is enabled when it begins incrementing once more.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Stevens within the system of Szczutkowski et al because dropping of the data frames helps prevent congestion avoidance.

With respect to Claim 3, Szczutkowski et al meets the limitation of "converting information into digitized information" is met on column 1, lines 5-15; and "providing said digitized information to a vocoder" is met on column 2, lines 40-46; and "generating said data frames by said vocoder at said predetermined rate" is met on column 3, lines 64-68.

With respect to Claim 4, all the limitation is met by Szczutkowski et al except for the limitation described below.

The limitation "wherein said dropping one or more of said data frames comprises dropping said data frames at a fixed, predetermined rate" is met by Stevens on page 310.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Stevens within the system of Szczutkowski et al so as to decrease latency on the communication channel and hence free up bandwidth on the channel.

With respect to Claim 5,15 and 34, all the limitation is met by Szczutkowski et al except the limitation disclosed below.

The limitation of "determining a communication channel latency" is met by Stevens on page 285, section 20.6, second paragraph.

Further limitation of "dropping said data frames at a variable rate in accordance with said communication channel latency" is met by Stevens on page 286, second paragraph.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Stevens within the system of Szczutkowski et al because varying the rate of dropping of the data frames leads to a more steady availability of bandwidth on the channel and consequently prevents bottlenecks.

With respect to Claim 6, 16 and 35 all the limitation is met by Szczutkowski et al except the limitation disclosed below.

The limitation of "decreasing said rate if said communication channel latency falls below at least one predetermined threshold" by Stevens on page 310, section 21.6, third and eighth paragraph.

Further limitation of "increasing said rate if said communication channel latency exceeds at least one other predetermined threshold" is met by Stevens on page 310, section 21.6, paragraphs 9-11.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Stevens within the system of Szczutkowski et al because varying the rate of dropping of the data frames leads to a more steady availability of bandwidth on the channel and consequently prevents bottlenecks.

With respect to Claim 7, 17 and 36 all the limitation is met by Szczutkowski et al except the limitation disclosed below.

The limitation "determining a communication channel latency" is met by Stevens on page 285, section 20.6, second paragraph.

The limitation "dropping said data frames at a first predetermined fixed rate if said communication channel latency falls below a predetermined threshold" is met by Stevens on page 286, second paragraph, page 310, paragraphs 3 and 8.

The limitation "dropping said data frames at a second predetermined fixed rate if said communication channel latency exceeds said predetermined threshold" is met by Stevens on page 310, paragraph 8, last sentence.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Stevens within the system of Szczutkowski et al because varying the rate of dropping of the data frames leads to a more steady availability of bandwidth on the channel and consequently prevents bottlenecks.

With respect to Claim 8, 18, 27 and 37 the limitation of an encoding rate is met by Szczutkowski et al on column 5, lines 35-40 and on column 2, lines 40-58. Szczutkowski et al does not disclose the limitation disclosed below. This is met by Stevens as shown below.

The limitation "determining a communication channel latency" is met by Stevens on page 285, section 20.6, second paragraph.

Further limitation of "dropping each of said data frames ... if said communication channel latency exceeds a predetermined threshold" is met by Stevens on page 310, paragraphs 3 and 8.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Stevens within the system of Szczutkowski et al because the dropping of packets leads to increased bandwidth on the channel and hence helps to prevent bottlenecks that prevents frames from being received in a timely manner.

With respect to Claim 9, 19, 28 and 38, all the limitation is met by Szczutkowski et al and Stevens except the limitation disclosed below.

The limitation "the step of dropping each of said data frames having an encoded rate equal to said first encoding rate and a second encoding rate if said communication channel latency exceeds a second predetermined threshold" is met by Szczutkowski et al on column 4, lines 42-61.

With respect to Clam 10, Szczutkowski et al meets the limitations of "receiving data frames at a receiver" on column 7, lines 24-30; and "storing said data frames in sequence in a queue" on column 7, lines 24-30; and "providing said stored data frames in sequence, to a decryption module" on column 7, lines 24-30; and "incrementing a state vector at a predetermined rate" on column 22, lines 21-23; and "providing said state vector to a decryption module" on column 22, lines 27-31; and "generating a codebook from said decryption module, using at least said state vector, said codebook for decrypting at least one of said data frames" on column 5, lines 35-40, column 24, lines 9-17; and "adjusting said state vector for each of said one or more data frames that are dropped" on column 24, lines 19-30. The codebook/unique code is represented by the secret key discussed on column 5, lines 35-40. This is because the secret key, (like the codebook) in conjunction with the state vector is used to encrypt the data frame.

Szczutkowski et al does not expressly disclose dropping of data frames. This is disclosed by Steven as shown below.

The limitation "dropping one or more of said data frames in said queue" is met by Stevens on page 310.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Stevens within the system of Szczutkowski et al because the dropping of packets leads to increased bandwidth on the channel and hence helps to prevent bottlenecks that prevents frames from being received in a timely manner.

With respect to Claim 11, all the limitation is met by Szczutkowski et al except the limitation disclosed below.

The limitation "determining a number of dropped data frames" is met by Stevens on page 310, paragraphs 8.

Further limitation of "advancing said state vector in proportion to said number of dropped frames" is met by Stevens on page 310, paragraphs 9-11 and on page 311, paragraph 1, last sentence.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Stevens within the system of Szczutkowski et al because the dropping of packets leads to increased bandwidth on the channel and hence helps to prevent bottlenecks that prevents frames from being received in a timely manner.

With respect to Claim 12, all the limitation is met by Szczutkowski et al and Stevens except the limitation disclosed below.

The limitation of "wherein the step of advancing said state vector comprises the step of advancing said state vector by a value of one for each of said one or more dropped frames" is met by Szczutkowski et al on column 24, lines 19-26.

With respect to Claim 13, all the limitation is met by Szczutkowski et al and Stevens except the limitation disclosed below.

The limitation "applying said adjusted state vector to said decryption module" is met by Szczutkowski et al on column 24, lines 9-17.

The limitation "generating a second codebook derived from said adjusted state vector" is met by Szczutkowski et al on column 5, lines 35-40.

The limitation "providing a sequential non-dropped frame in said queue to said decryption module" is met by Szczutkowski et al on column 7, lines 24-30; and

The limitation of "decrypting said sequential non-dropped frame using said second Codebook" is met by Szczutkowski et al on column 7, lines 24-30.

With respect to Claim 14, all the limitation is met by the combination of Szczutkowski et al and Stevens except the limitation disclosed below.

The limitation "wherein the step of dropping one or more of said data frames comprises the step of dropping said one or more data frames at a fixed rate" is met by Stevens on page 310.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Stevens within the combination of Szczutkowski et al so as to decrease latency on the communication channel and hence free up bandwidth on the channel.

With respect to Claim 22, Szczutkowski et al meets the limitation of "means for generating data frames at a predetermined rate" on column 5, lines 35-40; and "means for generating a state vector, said state vector incremented at said predetermined rate" on column 24, lines 19-22; and "an encryption module for generating a codebook from at least said state vector, said codebook for encrypting at least one of said data frames" on column 5, lines 35-40.

Szczutkowski et al does not meet the limitation disclosed below. This is met by Stevens as shown below.

The limitation "a processor for dropping one or more of said data frames and for disabling said state vector for each of said data frames that are dropped" is met by Stevens on page 286, second paragraph.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Stevens within the system of Szczutkowski et al because the dropping of packets leads to increased bandwidth on the channel and hence helps to prevent bottlenecks that prevents frames from being received in a timely manner.

With respect to Claim 23, all the limitation is met by the combination of Szczutkowski et al and Stevens except for the limitation described below.

The limitation "wherein said data frames are dropped at a fixed, predetermined rate" is met by Stevens on page 310.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Stevens within the combination of Szczutkowski et al so as to decrease latency on the communication channel and hence free up bandwidth on the channel.

With respect to Claim 24, all the limitation is met by Szczutkowski et al except the limitation disclosed below.

The limitation "wherein said data frames are dropped at a variable rate" is met by Stevens on page 286, second paragraph.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Stevens within the system of Szczutkowski et al because varying the rate of dropping of the data frames leads to a more steady availability of bandwidth on the channel and consequently prevents bottlenecks.

With respect to Claim 25, all the limitation is met by Szczutkowski et al except the limitation disclosed below.

The limitation "wherein said processor is further for determining a communication channel latency" is met by Stevens on page 285, section 20.6, second paragraph.

The limitation "said data frames are dropped at a decreased rate if said communication channel latency exceeds at least one predetermined threshold" is met by Stevens on page 310, paragraph 8.

The limitation "said data frames are dropped at an increased rate if said communication channel latency falls below at least one other predetermined threshold" is met by Stevens on page 310, paragraphs 9-11.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Stevens within the system of Szczutkowski et al because varying the rate of dropping of the data frames leads to a more steady availability of bandwidth on the channel and consequently prevents bottlenecks.

With respect to Claim 26, all the limitation is met by Szczutkowski et al except the limitation disclosed below.

The limitation of "wherein said processor is further for determining a communication channel latency, for dropping said data frames at a first fixed rate if said communication channel latency falls below a predetermined threshold, and for dropping said data frames at a second fixed rate if said communication channel latency exceeds said predetermined threshold" is met by Stevens on page 286, second paragraph and on page 310, paragraphs 3 and 8.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Stevens within the system of Szczutkowski et al because varying the rate of dropping of the data frames leads to a more steady availability of bandwidth on the channel and consequently prevents bottlenecks.

With respect to Claim 29, all the limitation is met by the combination of Szczutkowski et al and Steven except the limitation disclosed below.

The limitation of "receiver for receiving a wireless communication signal" is met by Szczutkowski et al on column 7, lines 14-24.

Further limitation of "demodulator for demodulating said wireless communication signal and for producing said data frames" is met by Szczutkowski et al inherently in the abstract and on column 2, lines 40-46.

With respect to Claim 30, Szczutkowski et al meets the limitation of "means for receiving data frames" on column 7, lines 24-30; and "a queue for storing said data frames" on

column 7, lines 24-30; and "means for generating a state vector, said state vector incremented at a predetermined rate" on column 22, lines 21-31; and "a decryption module for generating a codebook from at least said state vector, said codebook for decrypting at least one of said data frames" on column 5, lines 35-40, column 22, lines 21-31 and on column 24, lines 9-17. The codebook/unique code is represented by the secret key in the referenced paragraph. This is because the secret key, (like the codebook) in conjunction with the state vector is used to dencrypt the data frame.

Szczutkowski et al however does not meet the limitation disclosed below. This is met by Stevens as shown below.

The limitation of "a processor for dropping one or more of said data frames in said queue and for adjusting said state vector for each of said data frames that are dropped" is met by Stevens on page 310, paragraphs 3, 8-11.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Stevens within the system of Szczutkowski et al because dropping of data frames helps to decrease latency on the communication channel and hence free up bandwidth on the channel.

With respect to Claim 31, its limitation is similar to Claim 11 limitation and hence its rejection can be found therein.

With respect to Claim 32, all the limitation is met by the combination of Szczutkowski et al and Stevens except the limitation disclosed below.

The limitation of "wherein said state vector is advanced by a value of one for each of said dropped data frames" is met by Szczutkowski et al inherently on column 24, lines 19-26.

With respect to Claim 33, all the limitation is met by the combination of Szczutkowski et al and Stevens except for the limitation described below.

The limitation of "wherein said processor drops said one or more data frames at a fixed rate" is met by Stevens on page 310.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Stevens within the system of Szczutkowski et al so as to decrease latency on the communication channel and hence free up bandwidth on the channel.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tracey Akpati whose telephone number is 703-305-7820. The examiner can normally be reached on 8.30am-6.00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Vu can be reached on 703-305-4393. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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